

Band 2
 1.4MHz

10.3 OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27.53

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

RESULTS

10.3.1. OUT OF BAND EMISSIONS RESULT

GSM

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
GSM850	GPRS	824.2	-22.38	-13.00	9.38
		836.6	-23.50		10.5
		848.8	-22.05		9.05
	EGPRS	824.2	-21.96		8.96
		836.6	-22.83		9.83
		848.8	-22.62		9.62
GSM1900	GPRS	1850.2	-22.93		9.93
		1880.0	-22.68		9.68
		1909.8	-20.96		7.96
	EGPRS	1850.2	-21.70	8.7	
		1880.0	-22.54	9.54	
		1909.8	-22.18	9.18	

WCDMA

Band	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
Band 5	REL99	826.4	-32.31	-13.00	19.31
		836.6	-32.74		19.74
		846.6	-33.24		20.24
	HSDPA	826.4	-32.52		19.52
		836.6	-33.28		20.28
		846.6	-32.68		19.68
Band 4	REL99	1712.4	-32.61		19.61
		1732.6	-32.77		19.77
		1752.6	-32.05		19.05
	HSDPA	1712.4	-32.62		19.62
		1732.6	-32.57		19.57
		1752.6	-32.56		19.56
Band 2	REL99	1852.4	-32.87	19.87	
		1880.0	-31.98	18.98	
		1907.6	-32.49	19.49	
	HSDPA	1852.4	-32.39	19.39	
		1880.0	-32.58	19.58	
		1907.6	-31.44	18.44	

LTE 17

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
10 MHz	QPSK	709.0	-27.53	-13.00	14.53
		710.0	-26.23		13.23
		711.0	-27.36		14.36
	16QAM	709.0	-27.14		14.14
		710.0	-26.85		13.85
		711.0	-25.75		12.75
5 MHz	QPSK	706.5	-27.14		14.14
		710.0	-26.89		13.89
		713.5	-26.49		13.49
	16QAM	706.5	-27.12		14.12
		710.0	-27.20		14.2
		713.5	-26.59		13.59

LTE 5

Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
10 MHz	QPSK	829.0	-26.59	-13.00	13.59
		836.5	-26.99		13.99
		844.0	-26.87		13.87
	16QAM	829.0	-26.97		13.97
		836.5	-27.38		14.38
		844.0	-26.97		13.97
5 MHz	QPSK	826.5	-27.16		14.16
		836.5	-26.95		13.95
		846.5	-27.40		14.4
	16QAM	826.5	-25.84		12.84
		836.5	-26.05		13.05
		846.5	-27.09		14.09
3 MHz	QPSK	825.5	-27.37		14.37
		836.5	-26.86		13.86
		847.5	-26.06		13.06
	16QAM	825.5	-26.50		13.5
		836.5	-27.65		14.65
		847.5	-27.19		14.19
1.4 MHz	QPSK	824.7	-27.36	14.36	
		836.5	-28.03	15.03	
		848.3	-26.76	13.76	
	16QAM	824.7	-26.88	13.88	
		836.5	-27.01	14.01	
		848.3	-26.13	13.13	

LTE 4

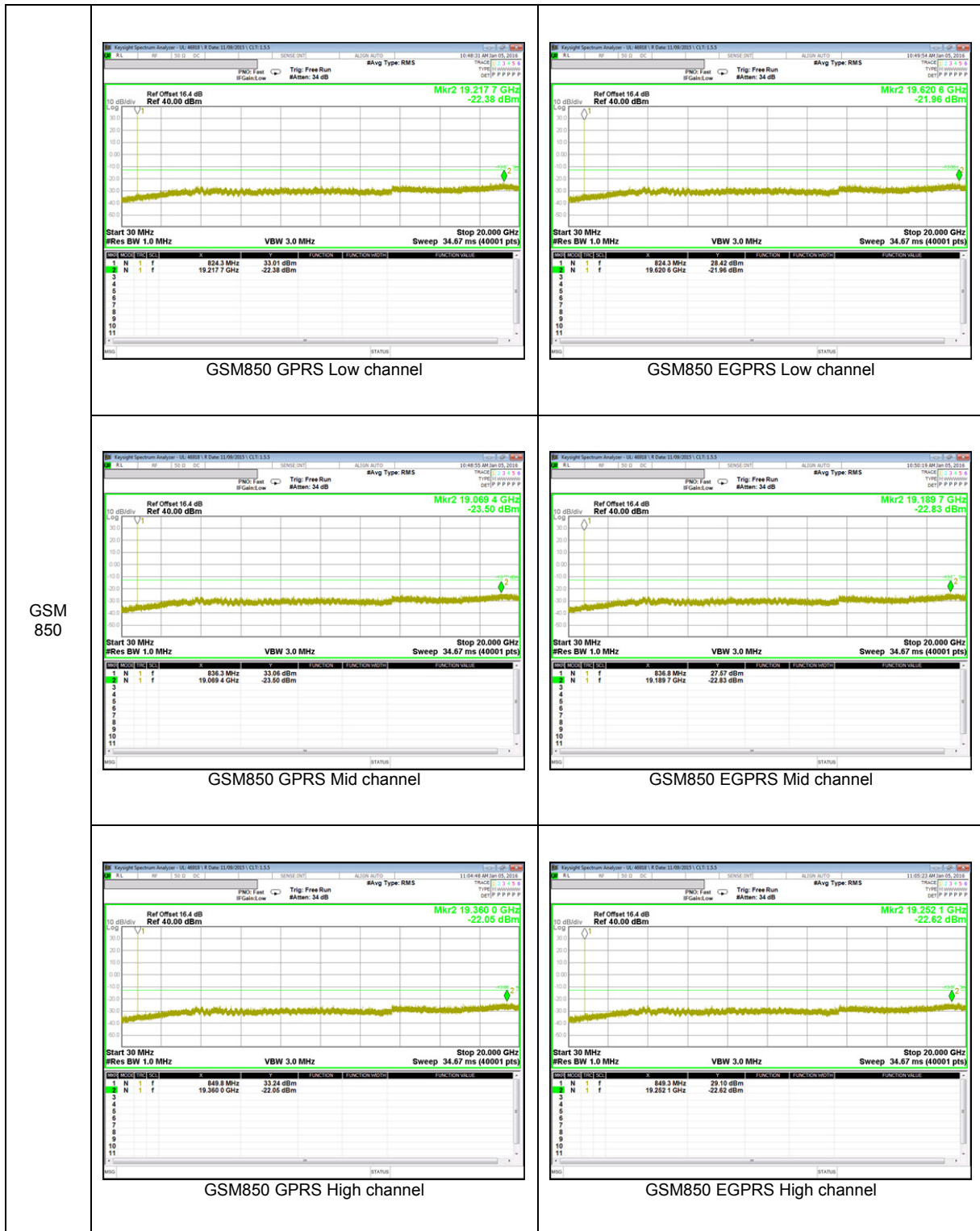
Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
20 MHz	QPSK	1720.0	-27.09	-13.00	14.09
		1732.5	-26.61		13.61
		1745.0	-25.77		12.77
	16QAM	1720.0	-26.18		13.18
		1732.5	-26.88		13.88
		1745.0	-26.67		13.67
15 MHz	QPSK	1717.5	-26.64		13.64
		1732.5	-27.35		14.35
		1747.5	-27.20		14.2
	16QAM	1717.5	-26.75		13.75
		1732.5	-26.07		13.07
		1747.5	-27.30		14.3
10 MHz	QPSK	1715.0	-27.25		14.25
		1732.5	-26.77		13.77
		1750.0	-26.70		13.7
	16QAM	1715.0	-26.56		13.56
		1732.5	-26.99		13.99
		1750.0	-26.11		13.11
5 MHz	QPSK	1712.5	-26.20	13.2	
		1732.5	-26.66	13.66	
		1752.5	-26.09	13.09	
	16QAM	1712.5	-26.60	13.6	
		1732.5	-26.11	13.11	
		1752.5	-25.26	12.26	
3 MHz	QPSK	1711.5	-26.67	13.67	
		1732.5	-26.34	13.34	
		1753.5	-26.03	13.03	
	16QAM	1711.5	-26.53	13.53	
		1732.5	-26.52	13.52	
		1753.5	-27.03	14.03	
1.4 MHz	QPSK	1710.7	-26.79	13.79	
		1732.5	-26.45	13.45	
		1754.3	-27.10	14.1	
	16QAM	1710.7	-26.72	13.72	
		1732.5	-26.99	13.99	
		1754.3	-25.96	12.96	

LTE 2

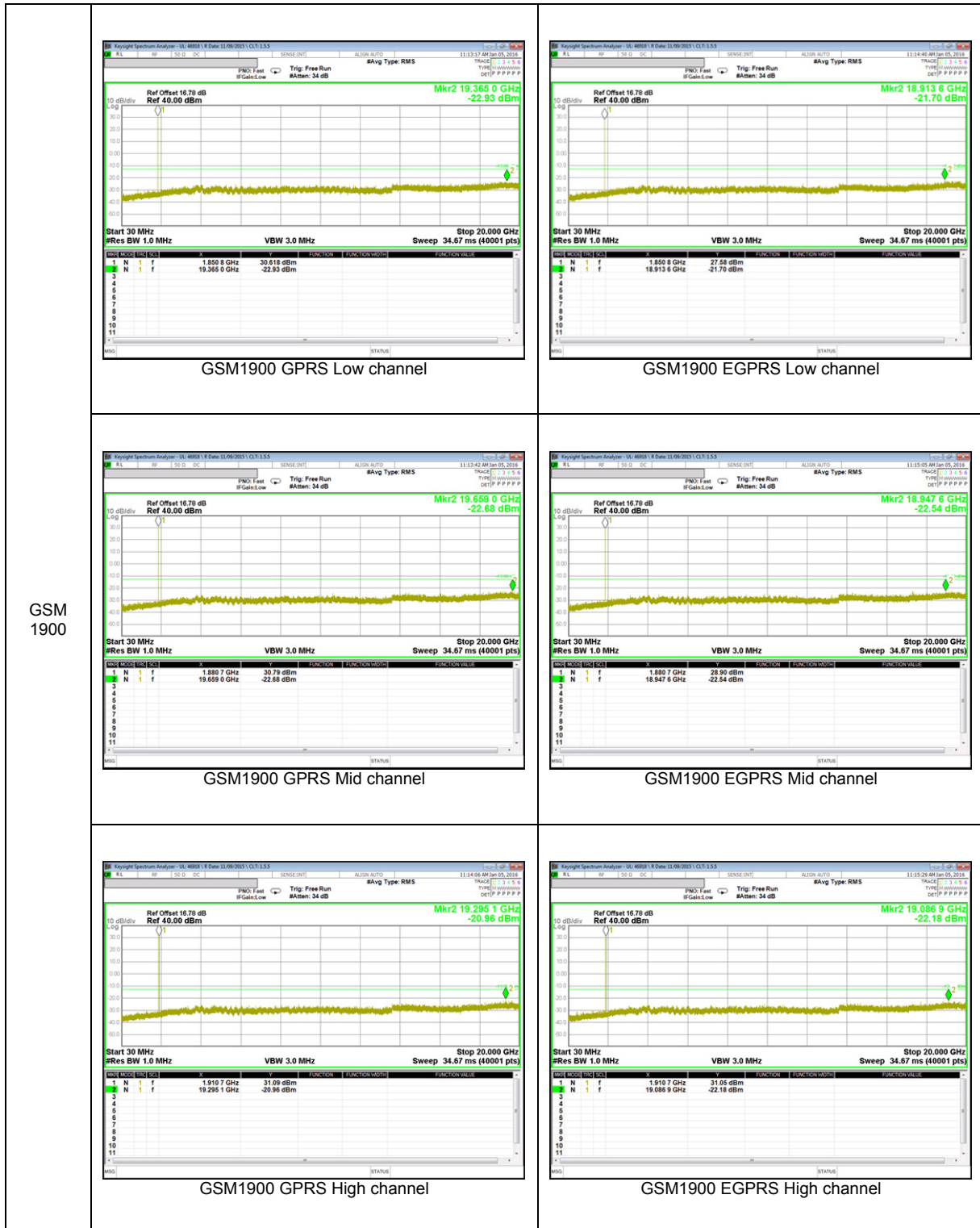
Bandwidth	Mode	f [MHz]	Spurious [dBm]	Limit [dBm]	Margin [dB]
20 MHz	QPSK	1860.0	-26.95	-13.00	13.95
		1880.0	-26.39		13.39
		1900.0	-26.88		13.88
	16QAM	1860.0	-27.60		14.6
		1880.0	-27.29		14.29
		1900.0	-27.04		14.04
15 MHz	QPSK	1857.5	-24.84		11.84
		1880.0	-26.58		13.58
		1902.5	-26.44		13.44
	16QAM	1857.5	-26.54		13.54
		1880.0	-26.43		13.43
		1902.5	-26.89		13.89
10 MHz	QPSK	1855.0	-26.29		13.29
		1880.0	-26.89		13.89
		1905.0	-25.30		12.3
	16QAM	1855.0	-25.58		12.58
		1880.0	-26.33		13.33
		1905.0	-27.18		14.18
5 MHz	QPSK	1852.5	-27.41	14.41	
		1880.0	-26.48	13.48	
		1907.5	-27.44	14.44	
	16QAM	1852.5	-26.09	13.09	
		1880.0	-25.91	12.91	
		1907.5	-26.84	13.84	
3 MHz	QPSK	1851.5	-26.48	13.48	
		1880.0	-26.34	13.34	
		1908.5	-26.29	13.29	
	16QAM	1851.5	-27.06	14.06	
		1880.0	-26.86	13.86	
		1908.5	-25.98	12.98	
1.4 MHz	QPSK	1850.7	-25.76	12.76	
		1880.0	-26.69	13.69	
		1909.3	-25.57	12.57	
	16QAM	1850.7	-26.64	13.64	
		1880.0	-26.95	13.95	
		1909.3	-26.90	13.9	

10.3.2. OUT OF BAND EMISSIONS PLOTS

GSM 850

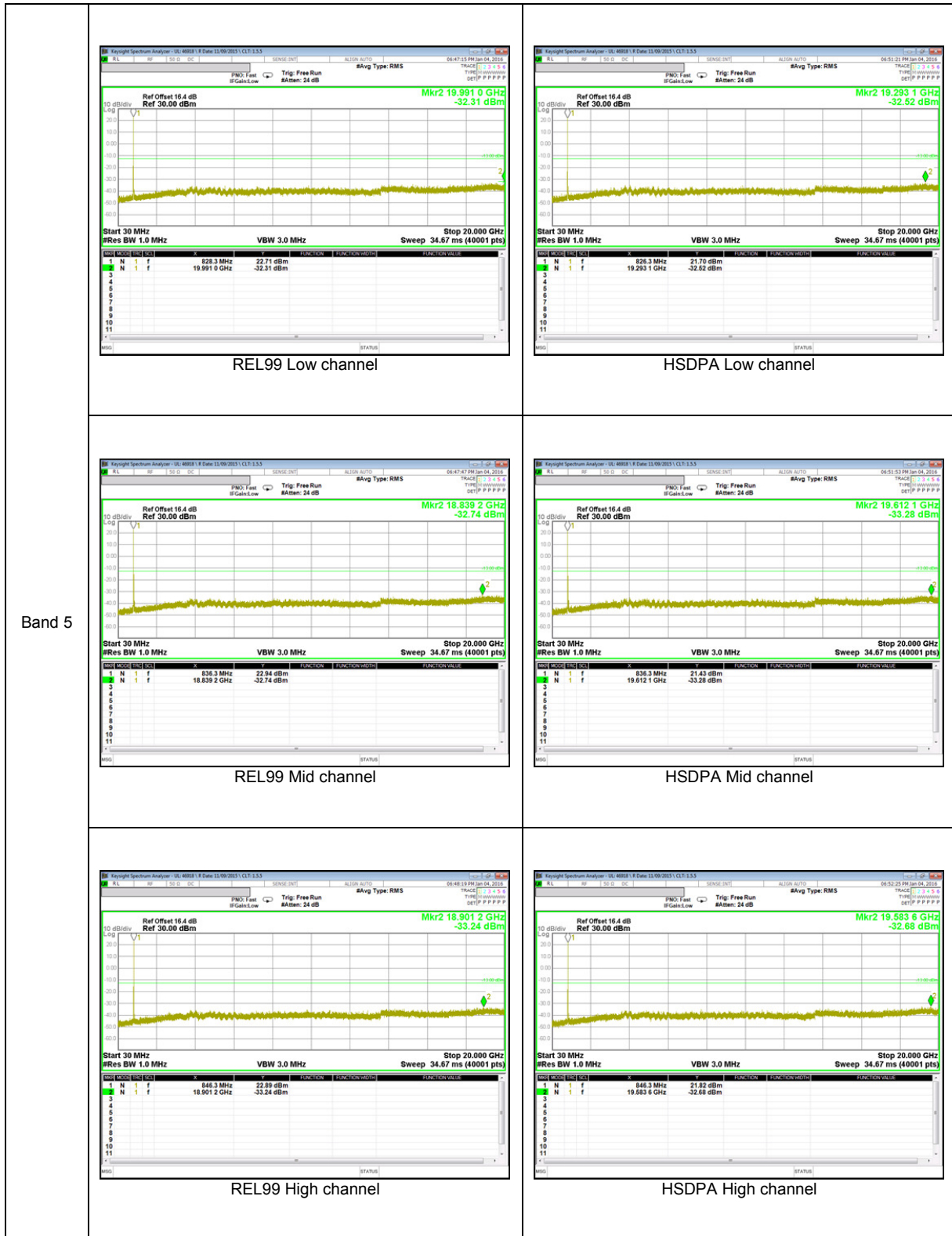


GSM 1900

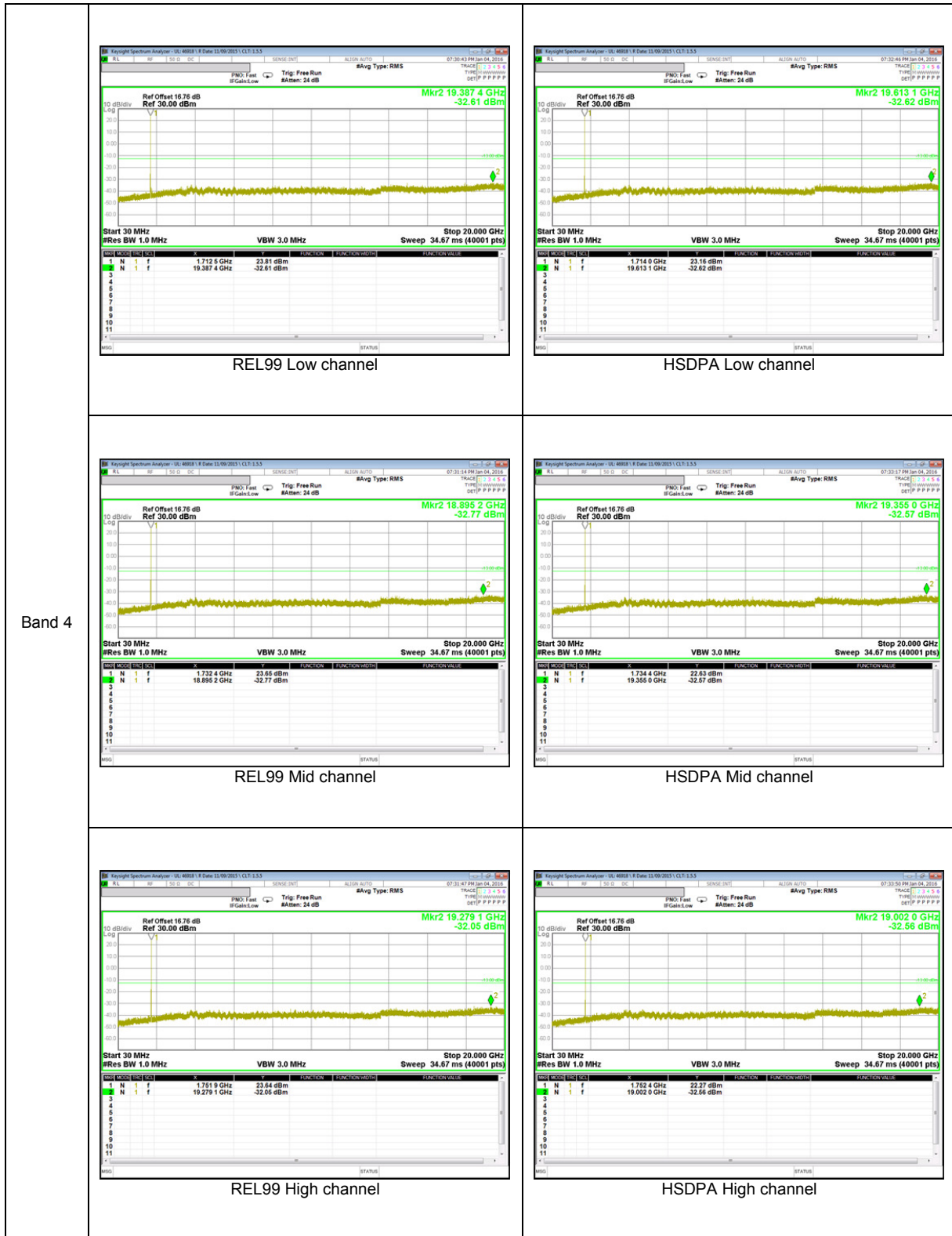


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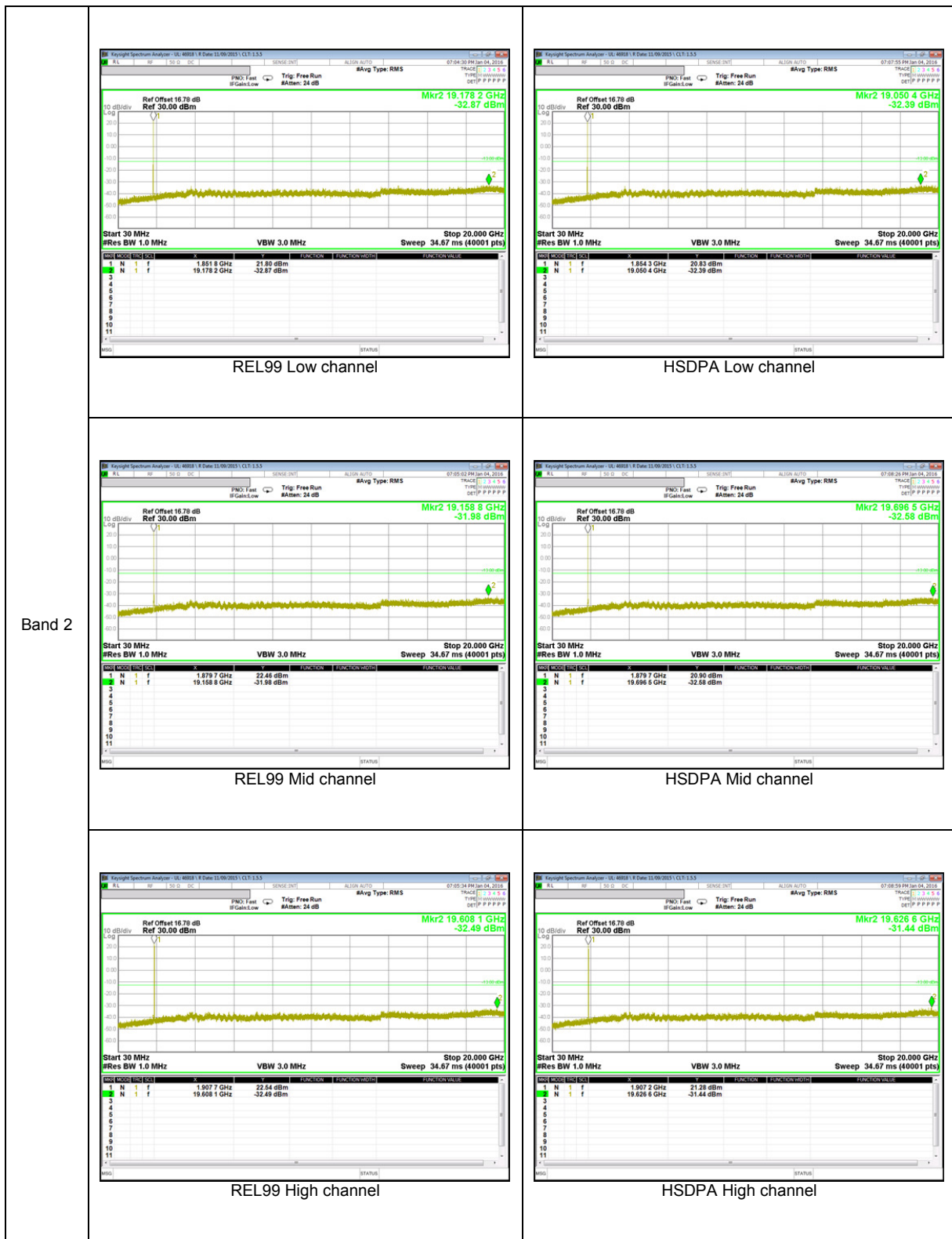
WCDMA Band 5



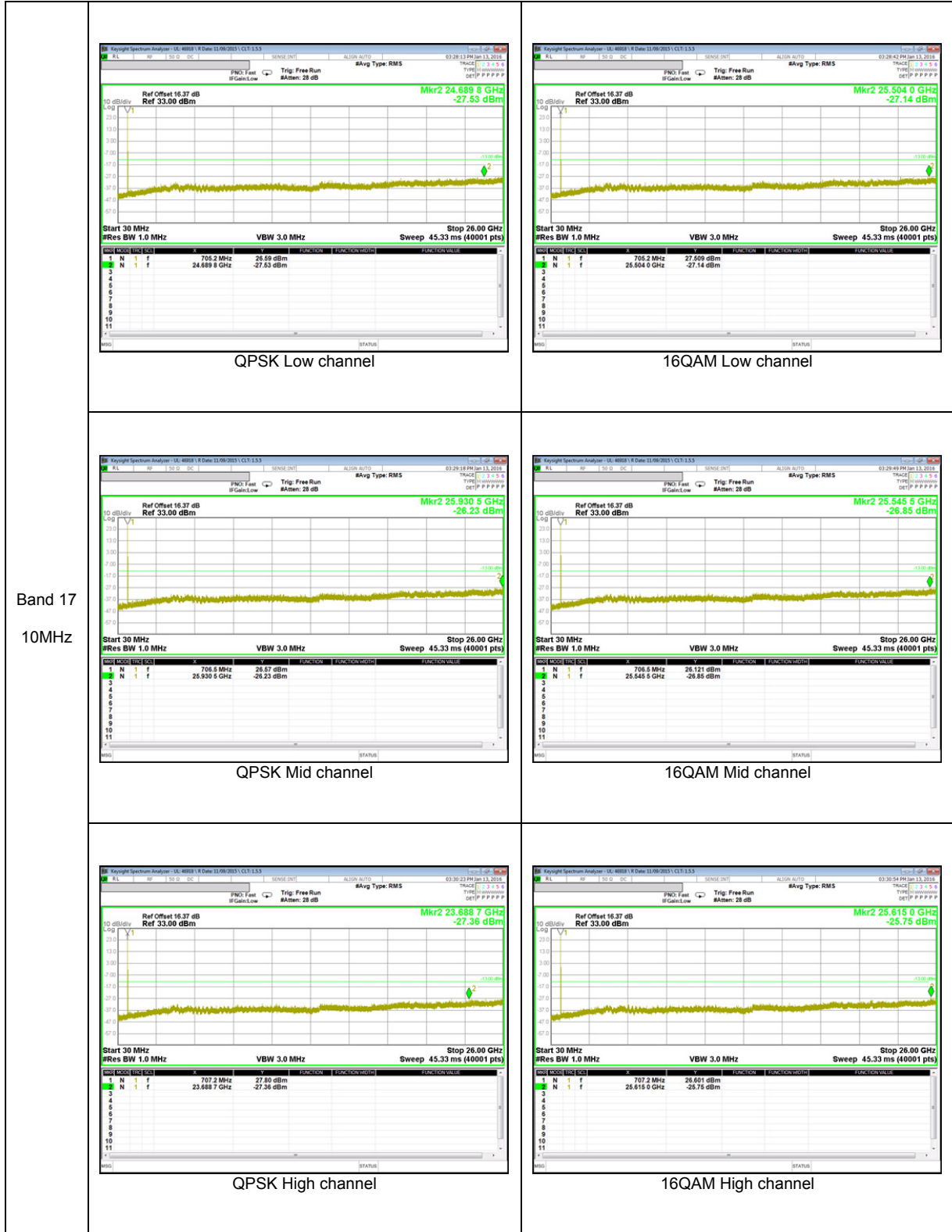
WCDMA Band 4

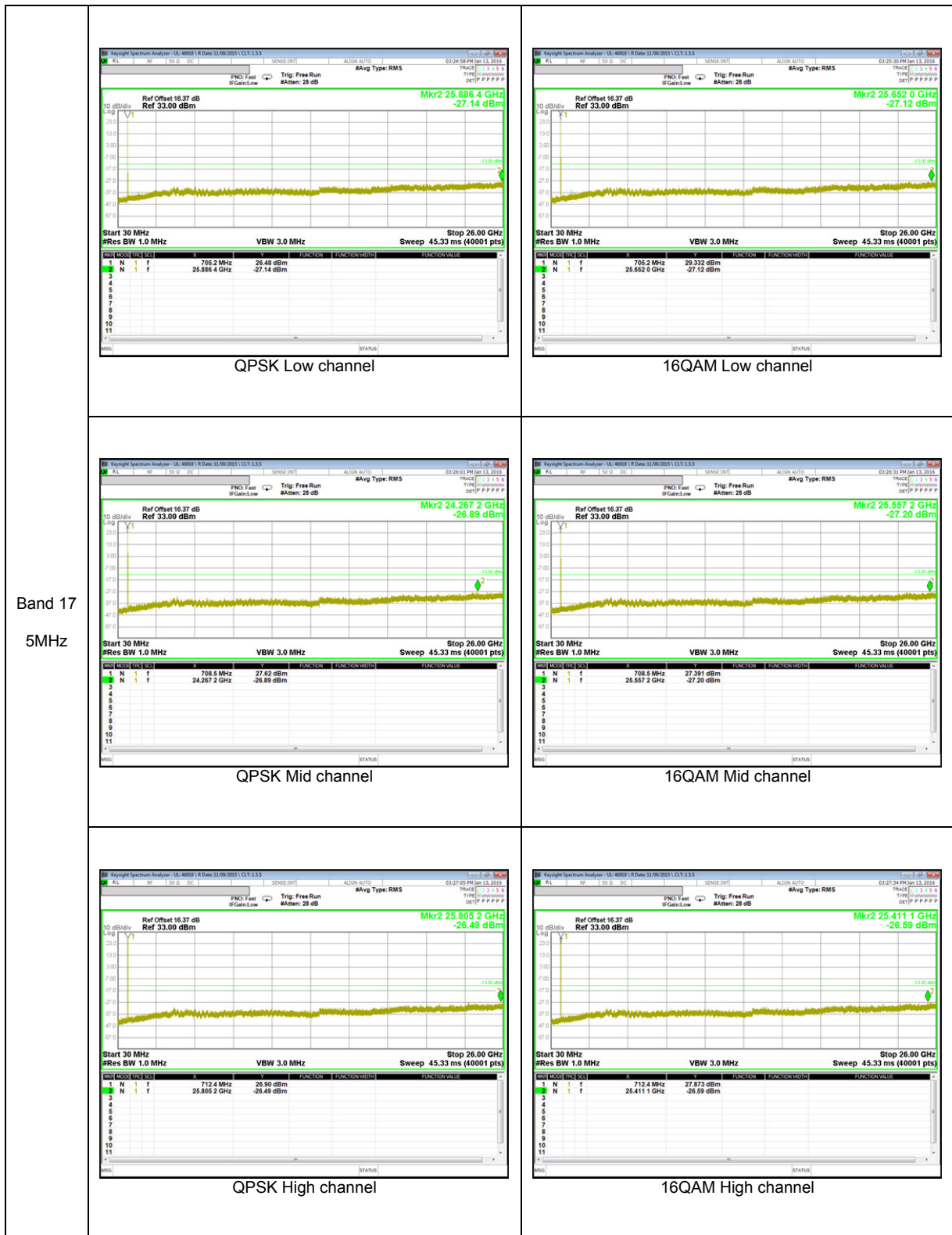


WCDMA Band 2

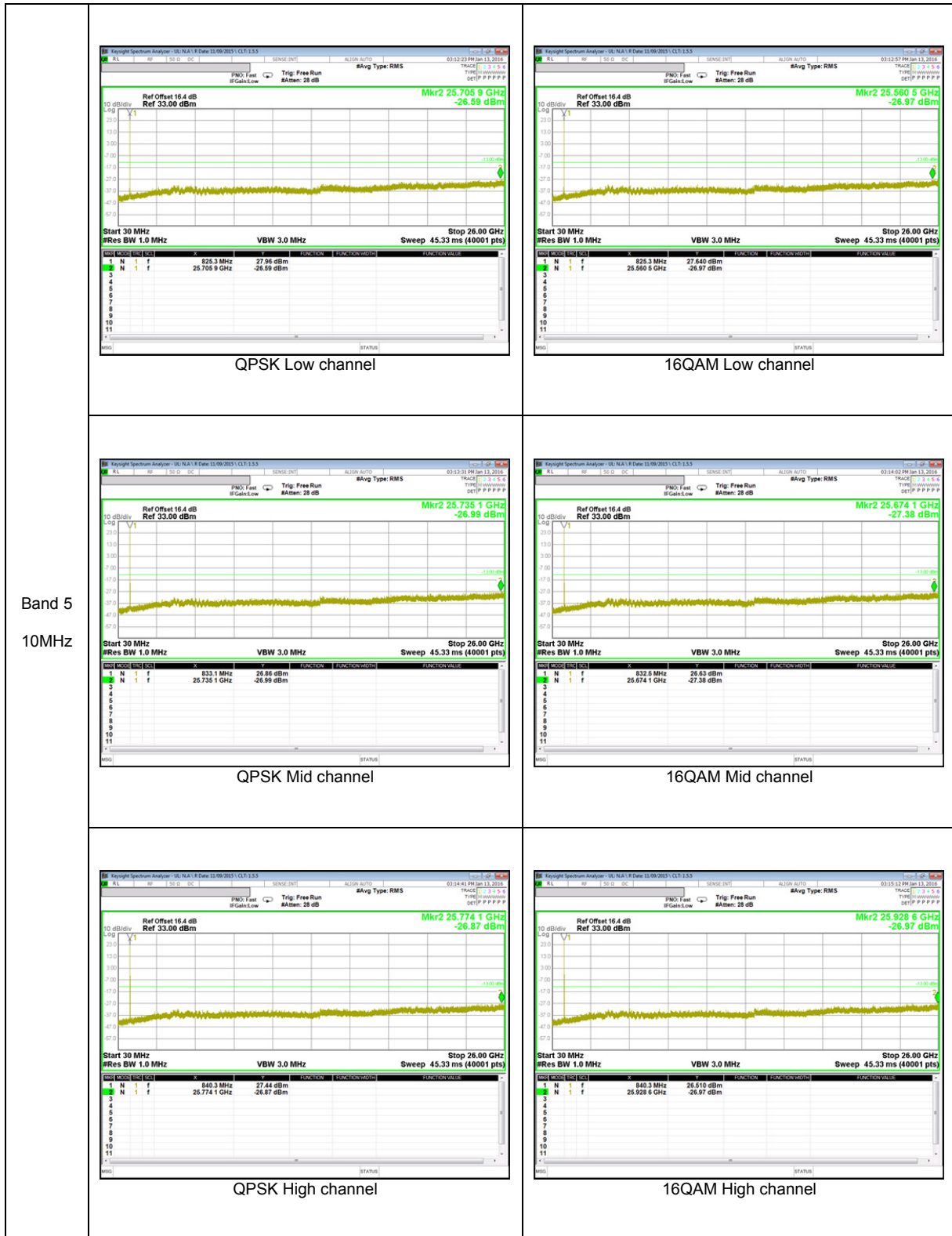


LTE Band 17





LTE Band 5



Band 5
 10MHz

